
DTR/Feature calculations

Calculations with Authorization Code

With Authorization Code, the DTR holding times change from 6.2 seconds to 19.6 seconds for intra-office calls, and from 14.1 seconds to 27.5 seconds for outgoing calls.

Use the values in steps 2 and 3 of “Detailed calculation: Method 1” and step 2 of “Detailed calculation: Method 2” to calculate the DTR requirements for a system with the Authorization Code option.

The following is assumed:

- all Digitone intra-office and outgoing calls require authorization
- the average number of special services prefix (SPRE) digits is two (the maximum is four)
- the average number of Authorization Code digits is 10 (the range is 1 to 14 digits)
- the average DTR holding time is 13.4 seconds

Calculations with Centralized Attendant Service

This method determines the DTR requirements for the main location of a system equipped with the CAS option. The following is assumed:

- all attendant calls presented through release link trunks from a remote PBX require DTRs
- the average number of digits dialed is four
- the average DTR holding time is 6.2 seconds

Use the procedure below to determine DTR requirements.

1 Calculate the attendant calls from the remote PBX:

$100 \times \text{attendant traffic from the remote (CCS)} \div \text{attendant work time (in seconds)}$

2 Add the attendant calls to the intra-office calls calculated in step 1 of “Detailed calculation: Method 1” and proceed with the remaining calculations of Method 1.

Calculations with Charge Account for Call Detail Recording

The DTR holding time for outgoing calls changes from 14.1 seconds to 20.8 seconds.

Apply this change to steps 2 and 3 of “Detailed calculation: Method 1” and step 3 of “Detailed calculation: Method 2” to determine the DTR requirements for a system with the Charge Account for CDR option.

The following is assumed:

- 50 percent of Digitone outgoing calls require a charge account
- the average number of SPRE digits is two (maximum is four)
- the average number of digits in the account number is 10 (the range is 2 to 23 digits)
- the average DTR holding time is 13.4 seconds (see Reference Table 7)

Calculations with Direct Inward System Access

This method is used when a system is equipped with the DISA feature. The following is assumed:

- DISA calls come through DISA trunks or DID trunks
- 75 percent of DISA calls require a security code
- the average number of digits in the security code is four (the range is one to eight)
- the DISA DTR holding time is 6.2 seconds

Use the procedure below to determine DTR requirements.

- 1** Calculate the number of DISA calls:
 $100 \times \text{DISA traffic} \div \text{call holding time}$
- 2** Calculate the DISA DTR traffic:
 $6.2 \times \text{DISA calls} \div 100$
- 3** Add this traffic to step 2 of “Detailed calculation: Method 2” and proceed with the remaining calculations of Method 2.

Calculations with Integrated Messaging Service Link

This method is used when a system is equipped with Integrated Messaging Service Link. The following is assumed:

- only messaging calls from 2500-type telephones require DTR service
- there is a 50-50 split of originating and terminating calls and 135 seconds average call holding time (step 1 next page)
- 50 percent of the calls from 2500-type telephones are intra-PBX calls (step 2 next page)
- the average time a caller listens to an announcement is 4 seconds (step 4 next page)
- if not known, assume the actual number of 2500-type telephones to be 60 percent of total lines

Use the procedure below to determine the DTR requirements.

- 1 Calculate originating calls from 2500 telephones:
calls from 2500 telephones = $\text{CCS/line} \times 100 \times \text{number of 2500 telephones} / (2 \times 135) = A$
- 2 Calculate intra-PBX calls from 2500 telephones:
intra-PBX 2500-telephone calls = $A \times 0.5 = B$
- 3 Calculate calls requiring service of DTR:
calls to DTR = $B \times 0.5 = C$, where 0.5 is the portion of B that goes to the messaging service
- 4 Calculate traffic (CCS) to DTR:
messaging CCS to DTR = $C \times 4/100$
- 5 Add messaging CCS to the total DTR traffic to determine overall DTR requirements.